ITS PROJECT APPLICATION FORM
FY 2009-2013 TIP

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2009-2013 MAG Transportation Improvement Program. Currently funding is available only for **FY 2013**.

Separate application forms are available for bicycle, pedestrian, air quality, and transit projects. Freeway, street and rail transit projects will be programmed in a separate process.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.

- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.

- Part C: MAG Technical Committee Additional Information. This section is used to collect information requested by the MAG ITS Committee. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding. **PLEASE NOTE: Part C is only available electronically.** It is available at: http://www.mag.maricopa.gov/project.cms?item=413, or you can contact Leo Luo: lluo@mag.maricopa.gov, and he will send you the electronic file.

Deadlines and Transmittal Instructions: All sections should be completed and returned to MAG Offices by **5:00 p.m. September 7, 2007.** Please e-mail Judy Tadlock at MAG, jtadlock@mag.maricopa.gov this application (Part A & B). Part C is only available electronically as noted above. Please e-mail Leo Luo the completed Part C, excel file to lluo@mag.maricopa.gov. The mailing address and FAX number for the MAG offices is:

ATTN: Judy Tadlock
Maricopa Association of Governments
302 North 1st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at http://www.mag.maricopa.gov/project.cms?item=413. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Eileen Yazzie at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Faisal Saleem, Maricopa County DOT**	2.	Telephone: **602-506-1241**
3.	E-mail **faisalsaleem@mail.maricopa.gov**	4.	Date: **September 7, 2007**

ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP
Part A: Project TIP Listing Information and Description

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name: **Maricopa County DOT**	2. Year (Please check box): ☒ FY 2013
3. Project Location (The project limits if applicable): **Regionwide – this project will enhance traveler information on key arterials throughout the region**	
4. Type of Work (Description of the work to be performed): **Develop and implement Arterial ATIS Enhancements, building on the previous Phase I efforts, 511 enhancements, and other key projects. This could include enhanced arterial data collection and real-time reporting, additional arterial information available through 511 phone and web, additional automated data exchanges between MCDOT/ADOT and municipal road closure/permitting systems, and other traveler information enhancements.**	
5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.): **$350,000**	6. Type of Federal Funds Requested (Please check box.): ☐ MAG STP ☒ CMAQ
7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.): **$150,000**	8. Type of Local Funds to be Used: (Please check only one box.): ☒ HURF ☐ Impact Fees ☐ General Fund ☐ Bond Proceeds ☐ Sales Tax ☐ Private ☐ Property Tax ☐ Other, Please specify: _____
9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested): **$500,000**	
10. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below. **This project would address arterial traveler information throughout the Region. It is not limited to one corridor or area or city within the Region.**	

ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **varies**	2. Name of the Roadway Section Used for the ADT Estimate: **Key arterials throughout the region.**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☒ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **4 - 6**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **4 - 6**	6. Length of the Facility (in miles): **N/A**
7. Township Coordinate of the Midpoint of the Facility: **N/A**	8 Range Coordinate of the Midpoint of the Facility: **N/A**	9. Section Coordinate of the Midpoint of the Facility: **N/A**

10. If the project improves traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: **N/A**

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☒	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2009-2013 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

- ☐ Includes Traffic Signal Improvements for a Single Agency
- ☒ Includes Traffic Signal Improvements that Apply to More than One Agency
- ☐ Includes FMS Improvements
- ☐ The Project Conforms to Local Land Use Plans
- ☐ The facility is on the adopted MAG Roads of Regional Significance Network
- ☐ Adds Traffic Signals that increase pedestrian crossing time for seniors

12 Management System (Please check only one box)

- ☒ Congestion Management System (CMS)
- ☐ Bridge Management System (BMS)
- ☐ Pavement Management System (PMS)
- ☐ Public Transportation Management System (PTMS)
- ☐ Safety Management System (SMS)
- ☐ Intermodal Management System (IMS)
- ☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

MCDOT Priority #3

Part C: MAG Technical Committee Additional Information

This section is used to collect information requested by the MAG ITS Committee. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding. **Part C is only available electronically. It is available at: http://www.mag.maricopa.gov/project.cms?item=413, or you can contact Leo Luo: lluo@mag.maricopa.gov, and he will send you the electronic file.**

Contact Information

Please contact Sarath Joshua or Leo Luo at (602) 254-6300 or sjoshua@mag.maricopa.gov, lluo@mag.maricopa.gov for additional information or questions.

FY 2009 - 2013 TIP - Programming 2013
MAG ITS Project Data Form

Please enter project data ONLY in highlighted cells, save the file with the lead agency name in it - ie. Mesa ITS Projects.xls
Submit this Excel workbook to MAG via email to: LLUO@MAG.MARICOPA.GOV

Please use one worksheet per project, with the tab at the bottom indicating agency priority

Links to various websites are provided for additional information and help
The worksheet titled "Example" shows an example on how to enter Data in the highlighted areas. If errors are detected alerts will pop-up in red text.

The worksheet titled "HELP" shows how to figure out your project's ITS Subsystems & Architecture Flows

Please enter required information in highlighted cells

A. Project Title & Sponsor

Lead Agency	Maricopa County DOT
Other Partnering Agencies	To be determined
ITS Project Title:	Arterial ATIS Enhancements, Phase 2

B. Project Goals & Objectives

Project Goals:

- Continue to enhance regional arterial traveler information and support regional traffic management;
- Facilitate sharing of planned construction and event data between participating agencies;
- Minimize double entry of planned event data by local jurisdictions.

Objectives:

This project will build on the 2008 MAG funded arterial ATIS project by expanding the availability of arterial traveler information as well as establish additional center-to-center connections for automated data exchange. Specifically, this project is envisioned to: Expand automated information exchanges between local jurisdictions and the RADS to collect local permitting information for key arterials throughout the Valley; continue to expand and ehnahce the arterial information available to travelers through 511 web and phone; and build on the successful model of arterial incident data exchange between Phoenix Fire CAD and RADS to include planned closure/restriction information from local jurisdictions.

C. Define ITS Subsystems, Achitecture Flows, Communications & Arterial ITS Applications

SELECT ITS Subsystems: http://www.iteris.com/itsarch/html/entity/pa	Yes or No
Center Subsystem	Yes
Traveler Subsystem	Yes
Field/Roadside Subsystem	No
Vehicle Subsystem	No
Communications Subsystem	Yes

Architecture Flows (Information flows among four subsystems: Traveler, Center, Roadside and Vehicle Subsystems)

From Subsystem	To Subsystem	Information flow

Traffic Management (TMS) [Local Agency TMCs]	Archived Data Management Subsystem (ADMS) [RADS Server]	traffic archive data
Archived Data Management Subsystem (ADMS) [RADS Server]	Traffic Management (TMS) [Local Agency TMCs]	archive requests
		archive status
Maintenance and Construction Management (MCMS) [Local Agency TMCs]	Archived Data Management Subsystem (ADMS) [RADS Server]	maintenance and construction archive data
Archived Data Management Subsystem (ADMS) [RADS Server]	Maintenance and Construction Management (MCMS) [Local Agency TMCs]	archive requests
		archive status
Traffic Management (TMS) [RADS Server]	Information Service Provider (ISP) [HCRS Server]	road network conditions
Personal Information Access (PIAS)	Information Service Provider (ISP) [HCRS Server]	traveler information, emergency traveler information

Communications: Required communications medium for data sharing with other agencies: (if applicable)

From agency	To agency	data flow	Medium	Existing?	Future (year) mm/yyyy	Check Date with
Local City Agencies (TMCs)	RADS Server	traffic information, maintenance and construction information, archive requests, archive status	Fiber/Internet	Yes		
RADS Server	HCRS Server	road network conditions, traffic information, maintenance and construction information	Fiber/Internet	Yes		
HCRS Server	511 web and phone	traveler information	Ethernet	Yes		

Arterial ITS applications	**Relevant Applications (ENTER: Yes or No)**	**Applicable ITS User Services Addressed http://www.iteris.com/itsarch/html/user/userserv.htm**	**Applicable ITS Market Packages http://www.iteris.com/itsarch/html/mp/mpindex.htm**
1. Traffic Management	Yes	1.1, 1.2, 1.6, 1.7, 8.1	ATMS07, ATMS08, MC10

2. Transit Operations Support	Yes	2.1	AD2
3. Interagency Data Sharing and Control	Yes	1.7, 7.1	AD2, ATMS07
4. Integrated Traveler Information	Yes	1.1, 1.2	ATMS06, ATIS1, ATIS2, ATIS10
5. Archived Data Management	Yes	7.1	AD1, AD2
6. Incident Management	Yes	1.7, 5.3	ATMS07, ATMS08, EM10
7. Freeway-Arterial	Yes	1.6, 8.1	AD1, AD2, ATMS07

D. Project Budget

(1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1 million per program year per agency.

(2) Joint projects that involve 3 or more agencies may exceed $1m in federal cost. Federal cost of each agency's component will not be counted against the $1m limit.

(3) There is no limit on the number of projects that may be submitted by an agency, but each project requires the 30 percent local cost match

(4) For multijurisdictional projects, the federal and local shares of each partnering agency must be shown below.

	Federal Cost	Local Match (min 30%)	Total Cost
Lead Agency	$350,000.00	$150,000.00	**$500,000.00**
Partnering Agency#1			**$0.00**
Partnering Agency#2			**$0.00**

Partnering Agency#3			**$0.00**
Total	$350,000.00	$150,000.00	$500,000.00
Cost percentage	**70.0%**	**30.0%**	

Note: Each participating agency should provide at least 30% local match for its share of the total cost

E. Project Schedule

The following project milestones and schedules are based on a typical project procurement process. Please select applicable milestones. Some ITS projects may follow an abbreviated process. ENTER estimated time for such a process

Standard Project Milestones	Default Schedule for Process	Applicable Milestones (ENTER - Yes OR No)	Estimated Time to Milestone (ENTER #Months)	Estimated Date (Enter> mm/yyyy)
Apply for ADOT project number				Oct-2011
Receipt of ADOT project number	Dec-2011	Yes	2	Dec-2011
Initial DCR	Jan-2012	Yes	2	Dec-2011
Final DCR	Feb-2012	Yes	6	Apr-2012
30% Preliminary Plans, Cost Estimate and Report	Apr-2012	No	0	NA
60% Preliminary Plans, Cost Estimate and Report	Jun-2012	No	0	NA
Final Preliminary Plans, Cost Estimate and Report	Aug-2012	Yes	12	Oct-2012
Environmental Clearance	Jun-2012	No	0	NA
Utility Clearance	Jul-2012	No	0	NA
Right-of-Way Clearance	Apr-2012	No	0	NA

Approval of IGA	Oct-2012	Yes	8	Jun-2012
Obligation authority of Federal funds	Nov-2012	Yes	12	Oct-2012
Advertised Date	Jan-2013	Yes	12	Oct-2012
Final Deployment	Jul-2013	Yes	24	Oct-2013

F. System Maintenance and Operations

Current staff resources available for ITS operations at the local agency (FTEs)	7
Additional staff resources required for fully utilizing features added by project (FTEs)	None
Estimated current annual ITS operations & maintenance budget	$1,200,000
Estimated additional annual operations & maintenance funds required for features added by project	$25,000
Estimated DATE from when required additional O&M funds will be available	Oct-2012

Other comments:

Information provided is for MCDOT only. Additional annual operations & maintenance funds shall be agreed upon by partner agencies.

G. Systems Engineering Analysis Requirement

Commitment to address the federal requirement for Systems Engineering Analysis:
Agency's intent to follow the process described in the 'V' diagram (See Appendix A of Arterial ITS Plan) during the project development process

Maricopa County DOT will incorporate a Systems Engineering Analysis in the scope of work for the project. The Systems Engineering Analysis will include but not be limited to the following:

1. Interface with the Regional ITS Architecture – Develop clear statement about project goals and objectives, and description of relevant subsystems, user services, and information transfer that satisfy the Regional ITS Architecture requirement.
2. Project Plan – Develop a plan that includes the responsibility of the partner stakeholders and contractors, project tasks and interdependencies, schedule and timeframe, including key milestones, and project budget.
3. Concept of Operations – Define a clear vision of how the project will meet the needs of stakeholders and how the system will operate under various scenarios. The Concept of Operations will be among the initial tasks, and will be developed in conjunction with the public partners and contractors.
4. System Requirements – Develop requirements, including user requirements and functional requirements. These will guide system design and implementation, and will be developed with stakeholders, in conjunction with the Concept of Operations. Goals and objectives will also be established.
5. Requirements Review – Develop plan for design reviews to ensure the design meets the proposed requirements and stakeholder needs and expectations.
6. System Design – Develop high-level design focusing on project architecture mapping and detailed design to address how the local jurisdiction systems will interface with RADS, and how the arterial information will be transferred to HCRS and ultimately 511, az511.gov, and other public and private sector ATIS tools. Plans will be developed to ver the system and subsystem operate in accordance with the requirements.

7. System Implementation – Review planned procurement process, software coding, database implementation, and configuration of necessary components of system, including interfaces with local jurisdictions.
8. System Verification - Develop procedures to test interfaces and data transfers to ensure the system is functioning as planned.
9. System Operation and Maintenance – Develop an Operations and Maintenance Plan to include maintenance resources, responsibilities, and system operations and maintenance procedures.
10. System Update – Develop a plan for future updates, enhancements, and expansion of the arterial ATIS RADS program, including responsible entities and anticipated timeframe.